Product Information

Version 1.0

ZEISS Axiolab 5

Your Microscope for Routine Materialography and Smart Documentation

SCIENCE SERVICES

ZEISS

Authorized Dealer

Your Microscope for Routine Materialography and Smart Documentation

Axiolab 5 is made for the routine microscopy work that goes on every day in your lab. Its compact and ergonomic design saves space and makes for easy handling. Axiolab 5 is a real team player. Combine it with Axiocam 208 color and take full advantage of the Smart Microscopy concept: you'll be experiencing digital documentation in a completely new way. Just focus your sample and press a single button for crisp images in true color. The digital image will look like you see it through the eyepieces, with all the details and subtle color differences clearly visible. Plus, Axiolab 5 automatically adds the correct scaling information to your images.

You get all of this in a standalone operation, without needing a PC or any additional software. Save time, money and valuable lab space with Axiolab 5. Digital documentation has never been easier.

Simpler. More Intelligent. More Integrated.

Digital Documentation Made Easy
Once you find a region of interest, simply press the Snap button right on the stand to acquire the image. It's as easy as that. You can control the microscope and its attached camera without even changing your grip. Your smart microscope system then automatically adjusts the parameters for you and documents your sample precisely as you see it through the eyepieces – detail-rich and in true color. The correct scaling is always included automatically. You don't need to invest in another computer or software either. The Smart Microscopy concept allows you to work more efficiently while always focusing on your sample.

Clever Ergonomics for Relaxed Lab Work
Axiolab 5 offers you an easy handling, ergonomic user concept that's adapted to your lab routine. You can access all the main controls with just one hand, including the Snap button, stage drive, focus adjustment, and brightness control. Ergotubes and the height and torque adaptable stage handle allow you to work in a comfortable position, even during extended use. The light manager provides uniform brightness at all magnifications, eliminating manual lamp intensity adjustments when changing objectives. Overall, Axiolab 5 minimizes and eases the manual steps, allowing you to work more efficiently and in greater comfort.

More Economic and Reliable
Axiolab 5 is on your side when it comes to cost saving. The Eco mode, for instance, saves energy and extends illumination life time. LEDs have a long lifetime as compared to conventional illumination systems. With LEDs, you avoid warm-up and cool-down times. Lamp replacement and lamp adjustment is a thing of the past. Save lab space and costs as Axiolab 5 does not require an additional computer and software. The Smart Microscopy concept also enables Axiolab 5 to be operated by both expert and non-expert users, always assuring short time to reliable data.
Of course, you can also operate this efficient stand-alone system in a connected laboratory environment and seamlessly integrate Axiolab 5 into your multimodal workflows.

Image acquisition and documentation at the press of a button

Clever ergonomics: All main controls accessible with one hand

Cost-saving operation enabled by Eco mode

Combine Routine Material Microscopy with Smart Documentation

ZEISS is well known for their expertise in developing light microscope solutions for materials investigation. The Axiolab 5 product family takes a well-defined position in the ZEISS materials lab solution portfolio: Axiolab 5 is the right choice if your routine materialography applications place high demands on ergonomic operation and efficient digital documentation. Since the Smart Microscopy concept does not require additional imaging software or even a computer, Axiolab 5 is also the first choice from an economic point of view.

ZEISS Primotech
Compact manual microscope for material and geoscience education

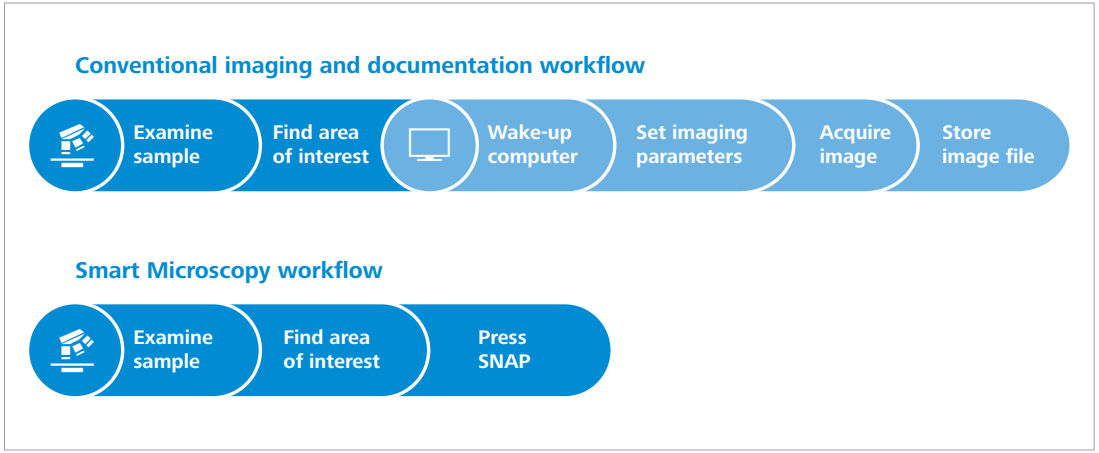
ZEISS Axiolab 5
Manual routine microscope for the materials laboratory, enabling ergonomic operation and smart documentation

ZEISS Axioscope
Encoded and motorized microscope for highly productive materials research and routine

ZEISS Axio Imager
High-end microscope system for advanced materials research

Smart Microscopy – Digital Documentation Made Easy

Used in combination with the microscope camera ZEISS Axiocam 208 color, you have the full advantage of a smart stand-alone microscope solution. Digital documentation is part of the system design: Just press the ergonomic Snap button and you're done.



Always stay focused on your sample, thanks to Smart Microscopy. Camera settings such as white balance, exposure time, and image enhancement functions are done automatically. Without needing additional imaging software or even a computer, you can:

- Snap images and record videos directly
- Use mouse (and optionally, a keyboard) to control your camera via on-screen display
- Save settings
- Store images with all microscope and camera metadata as well as scaling information
- Predefine the name or rename your image

Imaging and Documentation without a PC

In combination with ZEISS Axiocam 208 color, ZEISS Axiolab 5 operates independently of a computer system.

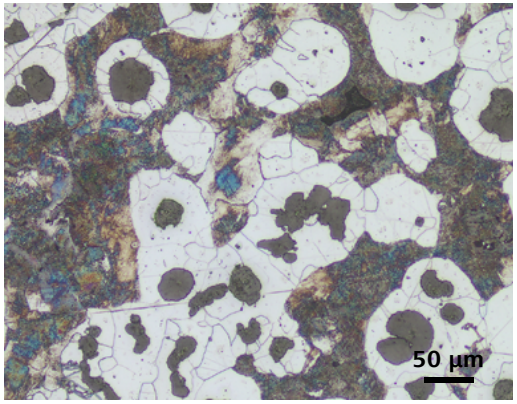
ZEISS Labscope for Connected Routine Imaging

Operating ZEISS Axiolab 5 with ZEISS Labscope imaging app is ideal for connected microscopy, especially in education.

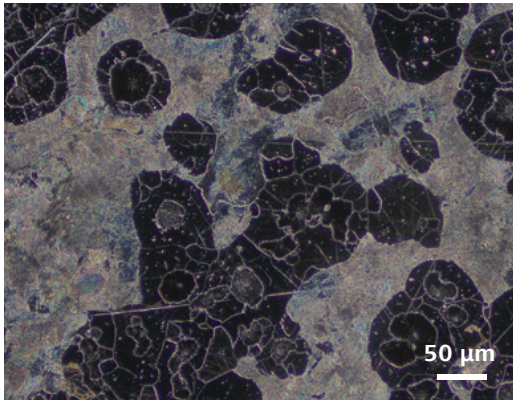
ZEISS ZEN core for Advanced Applications

Use the ZEISS imaging software ZEN core to perform advanced imaging and analysis tasks with ZEISS Axiolab 5.

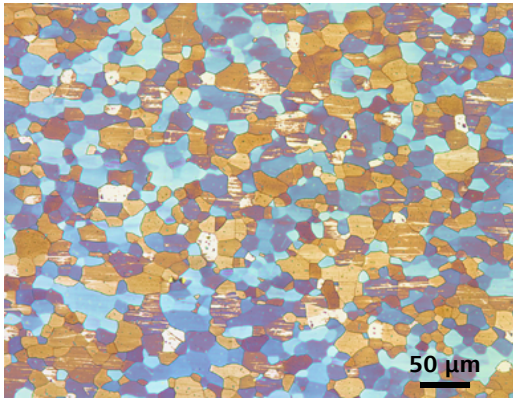
ZEISS Axiolab 5 at Work: Metallography



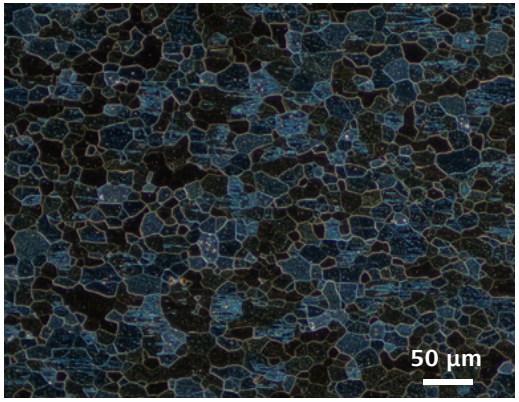
Cast iron, reflected light, bright field, EC EPIPLAN 20×/0.4



Cast iron, reflected light, dark field, EC EPIPLAN 20×/0.4



Color-etched steel, reflected light, bright field, EC EPIPLAN 20×/0.4



Color-etched steel, reflected light, dark field, EC EPIPLAN 20×/0.4

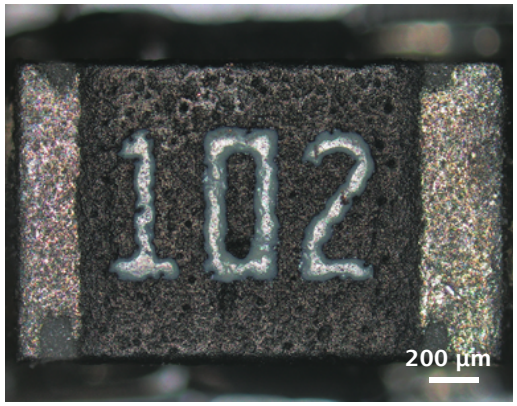
Typical tasks and applications

- Determine grain sizes, structure, distribution and phases
- Quickly carry out on-site analysis
- Study mode(s) of material failure: fatigue, corrosion, creep deformation, stress cracks or fractures.

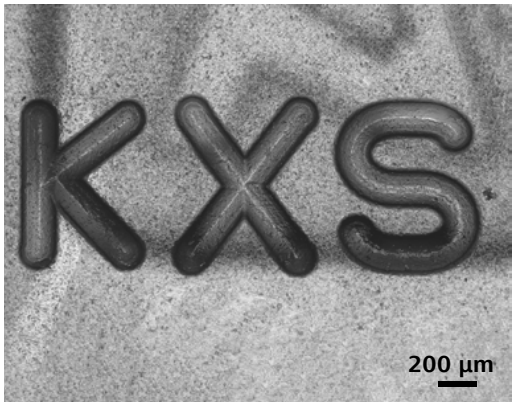
How you benefit from ZEISS Axiolab 5

- Clearly visualize all sample features.
  ZEISS Axiolab 5 supports your examination with all essential contrast methods including dark field and Differential Interference Contrast
- Get your work done – quickly and easily.
  Our Smart Microscopy concept assures simple operation and rapid image acquisition.
- See your samples as they really are. Document your sample just as you see it through the eye piece.

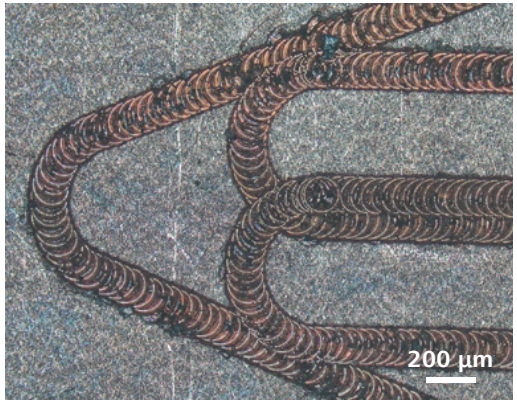
ZEISS Axiolab 5 at Work: Documentation



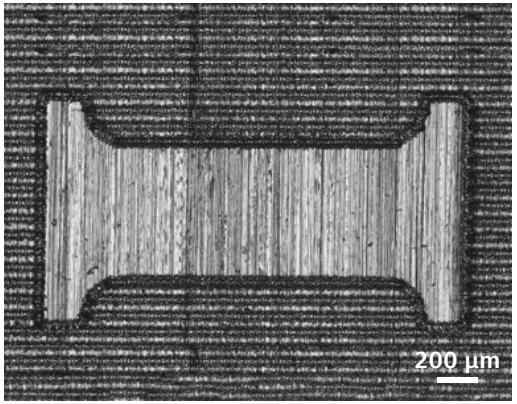
Electronic device SMD resistor: Document the quality of printing and contact surfaces. EC EPIPLAN 5×/0.13



Injection-molded identification letter at transparent plastic part, EC EPIPLAN 5×/0.13



Milling marks for engraving purposes, EC EPIPLAN 5×/0.13



Laser-structured metal part, EC EPIPLAN 5×/0.13

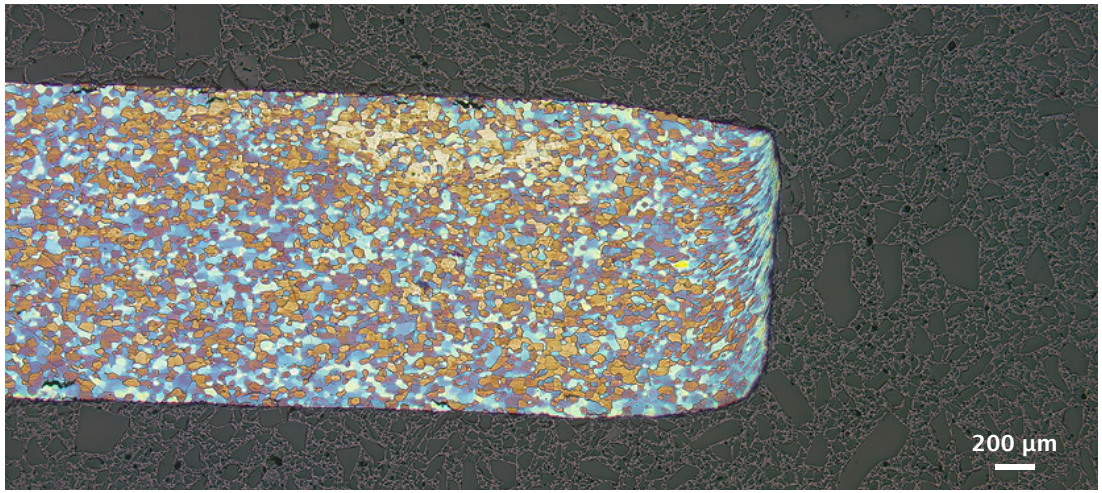
Typical tasks and applications

- High-throughput material inspection and documentation
- Incoming goods inspection
- High-quality imaging for publications
- Failure analysis
- Process quality monitoring

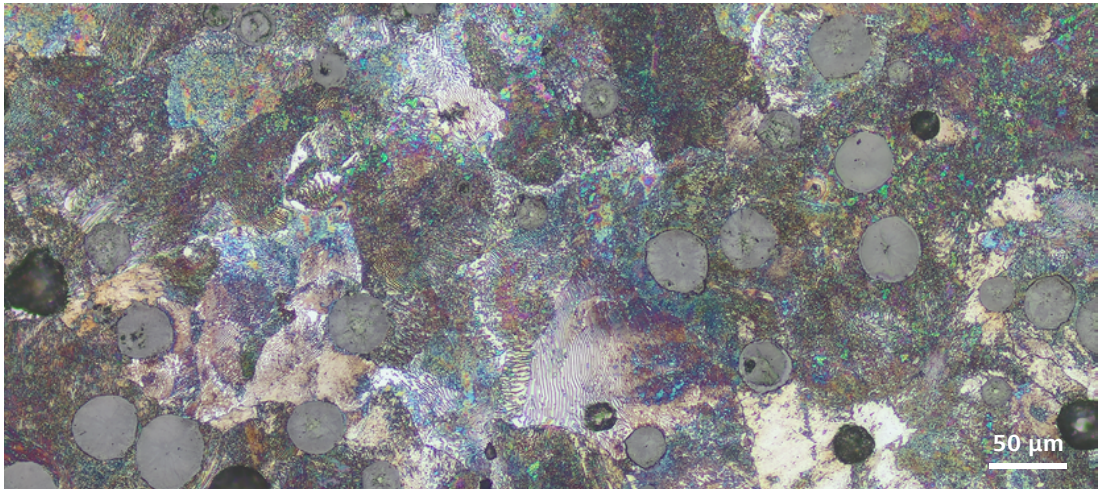
How you benefit from ZEISS Axiolab 5

- Acquire images quickly and easily. ZEISS Smart Microscopy concept puts this power literally at your fingertips.
- Replicate image settings as needed. Light intensity manager allows you to reproduce illumination settings for similar samples
- Save space in the lab. Axiolab 5's small footprint means more room for other tools or instruments.

ZEISS Axiolab 5 at Work: Sample Preparation



Color-edged steel embedded in resin. Check the quality of the mounting. EC EPIPLAN 10×/0.25



Cast iron with spherulitic graphite. Areas with corrosion and broken out graphite spheres indicate refurbishing of samples.

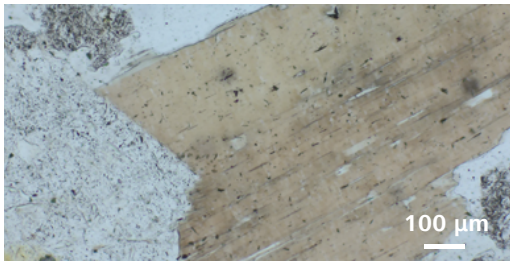
Typical tasks and applications

- Monitor the sample preparation process
- Quick overview of the state of the micro graph. Is it still useable? Does it need refurbishing?
- See the quality of your sample preparation process. Does the mounting meet the required quality?

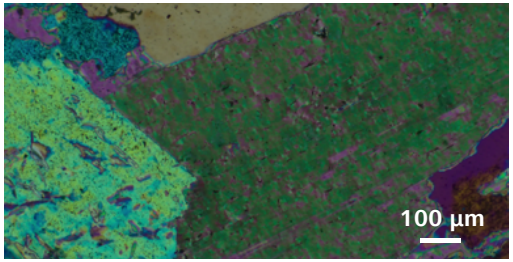
How you benefit from ZEISS Axiolab 5

- Save space on benchtops for other sample preparation tools. The small footprint frees space for all tools in the sample preparation workflow.
- See smallest color changes and preparation effects. High contrast optics and true to life views of the sample let you monitor changes as you prepare your samples.
- Get the right illumination for your work. The light manager responds to provide uniform brightness at all magnifications, eliminating manual adjustments.
- Find smallest polishing defects. Circular Differential Interference Contrast reveals changes in topography that might indicate sample polishing artifacts.
- See any scratches present on your prepared sample. Axiolab's dark field contrast makes easier to visualize any marks or irregularity on your prepared samples.

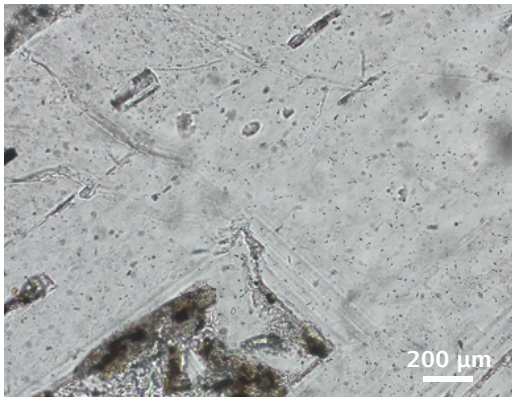
ZEISS Axiolab 5 at Work: Mineralogy



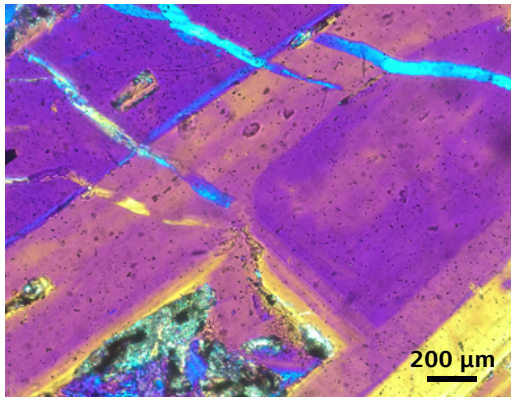
Biotite inside granite, transmitted light, bright field, EC Plan-NEOFLUAR 10×/0.3 Pol



Biotite inside granite, transmitted light, crossed polarizers with lambda plate, EC Plan-NEOFLUAR 10×/0.3 Pol



Fluorite, transmitted light, bright field, EC Plan-Neofluar 5×/0.16 Pol



Fluorite, transmitted light, crossed polarizers with lambda plate, EC Plan-Neofluar 5×/0.16 Pol

Typical tasks and applications

- Examine thin sections of rock and minerals to determine their composition.
- Classify anisotropic materials like calcite, olivine, titanite, or zircon.
- Get answers to questions relating to refractive indices, cleavages, double refraction, extinction angles, optical path differences, and the number and angle of optical axes.

How you benefit from ZEISS Axiolab 5

- High contrast images in polarization with strain free optics.
- Measure of cleavages and extinction angles. The 360° rotation table indicates the angular orientation of your sample.
- Image thin sections. Transmitted light helps you examine fine features in thin sections.
- Image opaque materials. Reflected light is commonly used in metallography applications to illuminate variations in the sample, including color variations.

Your Flexible Choice of Components

1 Microscope

ZEISS Axiolab 5:

- Encoded stand with transmitted light
- Encoded stand with transmitted light and reflected light fluorescence

2 Objectives

Recommended classes of objectives:

- A-PLAN Pol
- N-ACHROPLAN Pol
- EC-EPIPLAN
- EC-Epiplan NEOFLUAR
- EC-EPIPLAN Pol
- EC-Epiplan NEOFLUAR Pol

3 Illumination

Transmitted light:

- 10 W LED illumination
- 35 W halogen illumination (optional)

Reflected light:

- Up to 3 fluorescence LEDs

4 Cameras

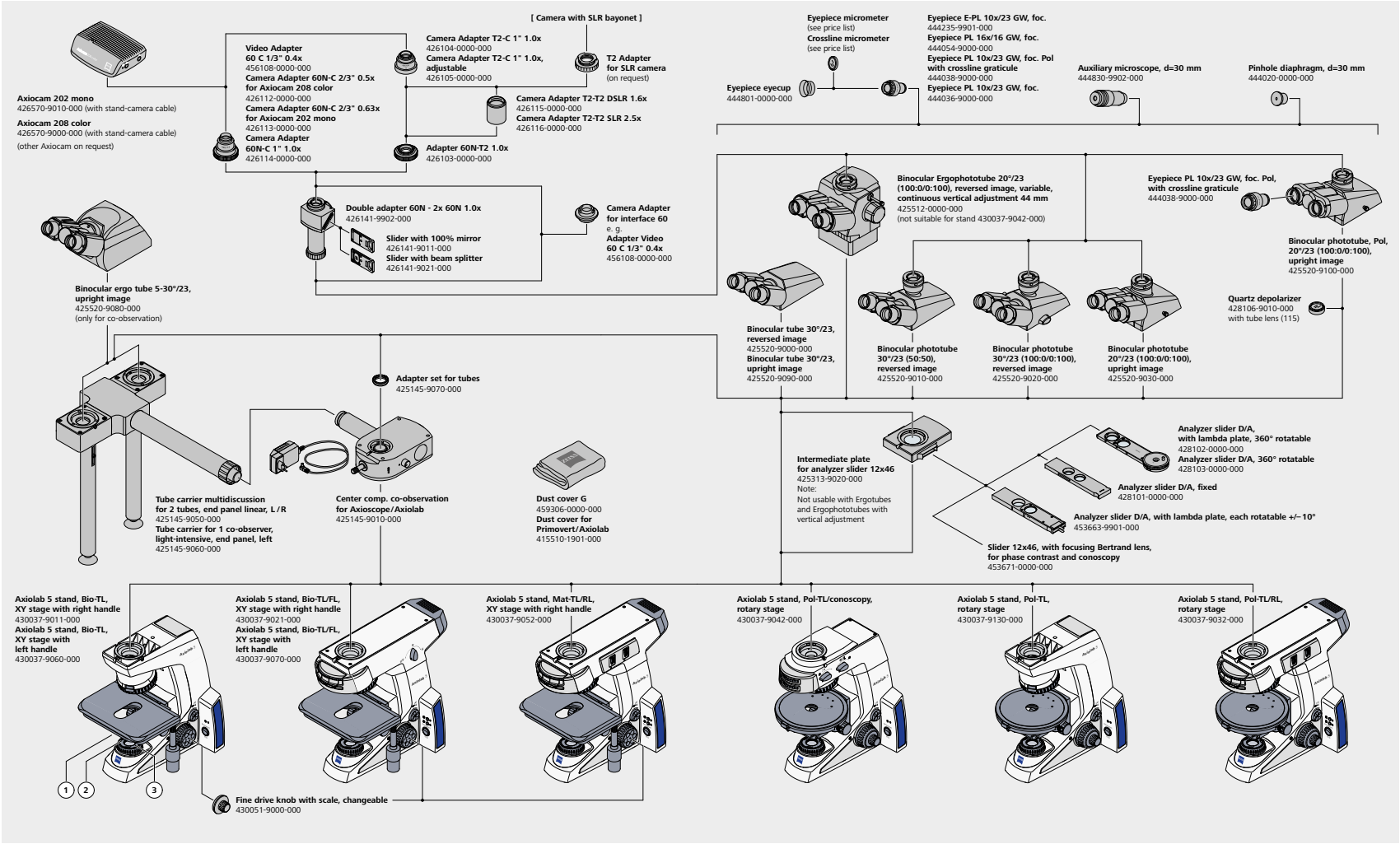
Recommended cameras:

- ZEISS Axiocam 208 color
- ZEISS Axiocam 202 mono

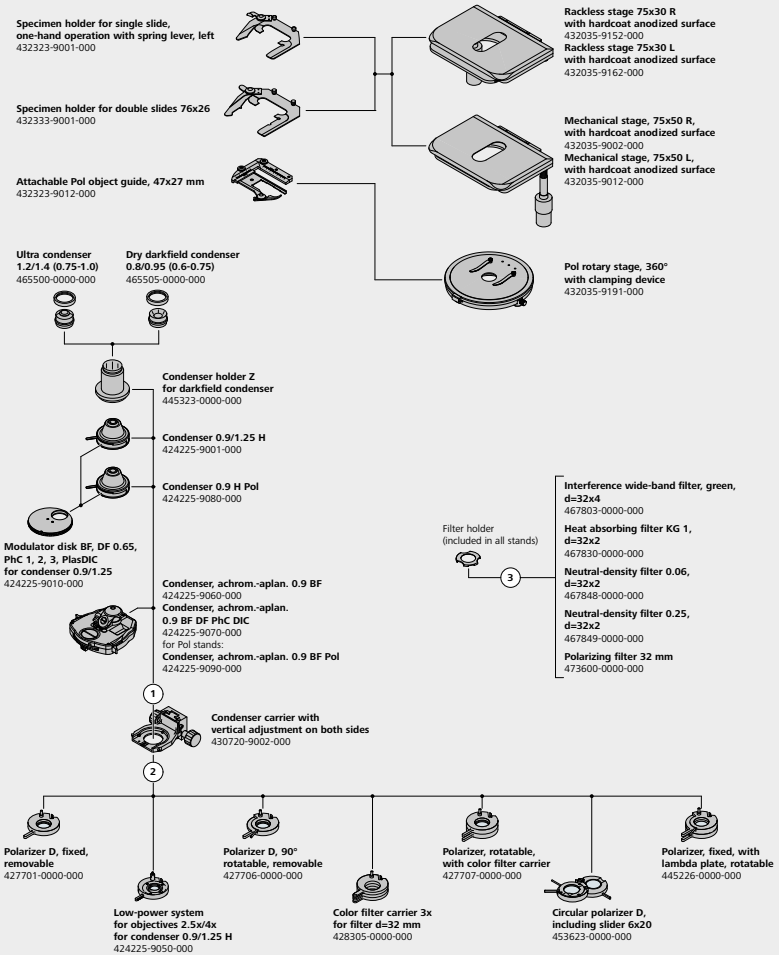
5 Software

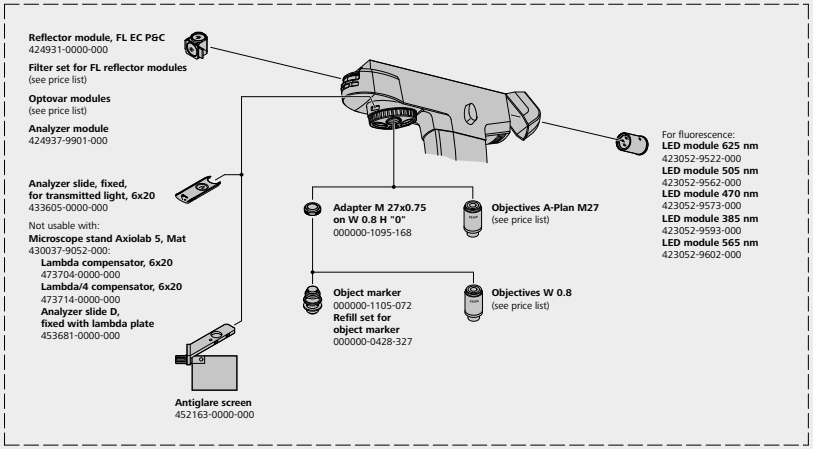
- Stand-alone (on screen display)
- Labscope imaging app
- ZEN imaging software

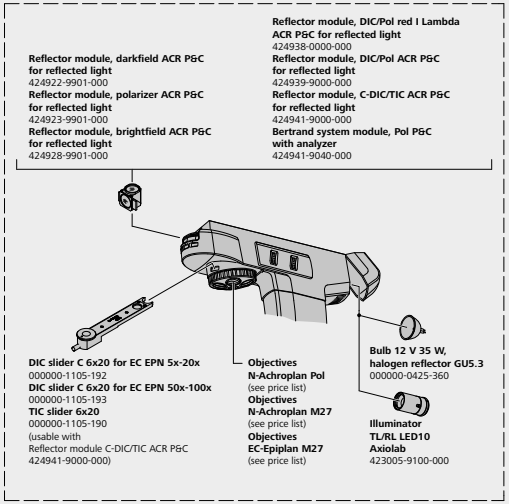
System Overview

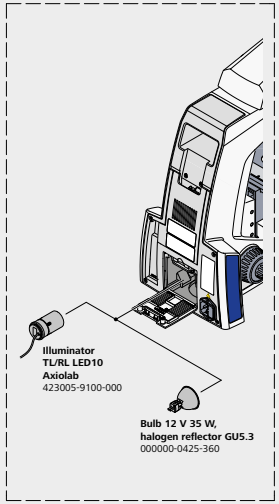


System Overview



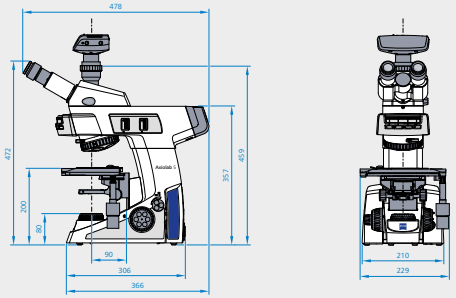




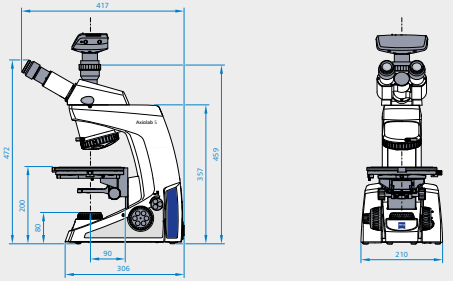


Technical Specifications

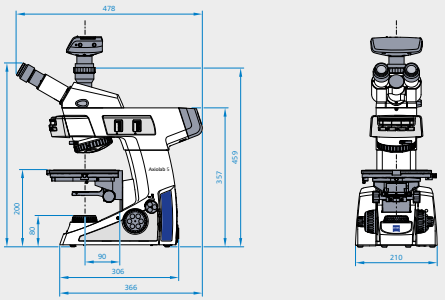
ZEISS Axiolab 5 Stand, Mat-TL/RL



ZEISS Axiolab 5 Stand, Pol-TL



ZEISS Axiolab 5 Stand, Pol-TL/RL



Dimensions (length x width x height)	
Axiolab 5 basic microscope stand without tube (430037-9011-000)	Approx. 304 mm × 210 mm × 357.5 mm The other stand types differ slightly in depth and significantly in height, depending on the tube used.

Operation	
Permissible ambient temperature	+10 °C to +40 °C
Permissible relative humidity (without condensation)	Max. 75 % at 35 °C
Highest permitted altitude of use	2,000 m
Air pressure	800 hPa to 1,060 hPa
Degree of pollution	2

Operational Specifications	
Operational area	closed rooms
Protective class	I
Protection type	IP 20
Electrical safety	in accordance with DIN EN 61010-1 (IEC 61010-1) in compliance with CSA and UL regulations
Overvoltage category	II
RFI suppression	complies with EN 55011 Class B
Noise immunity	complies with DIN EN 61326/A1
Mains voltage for the Axiolab 5	100 to 240 V
Mains frequency	50 to 60 Hz
Power consumption of the Axiolab 5	100 VA

Technical Specifications

	ZEISS Axiolab 5 Stands	ZEISS Axiolab 5 Stand, Mat-TL/RL	ZEISS Axiolab 5 Stand, Pol-TL/conoscopy	ZEISS Axiolab 5 Stand, Pol-TL	ZEISS Axiolab 5 Stand, Pol-TL/RL
Material Number		430037-9052-000	430037-9042-000	430037-9130-000	430037-9032-000
Illumination	TL Light Source	LED 10W	LED 10W	LED 10W	LED 10W
	RL Light Source	LED 10W	NA	NA	LED 10W
Stand	Nose Piece	5× HD coded, M27	5× coded, M27. (4x BF, Pol, centerable and 1× BF, Pol, fixed)	5× coded, M27. (4x BF, Pol, centerable and 1x BF, Pol, fixed)	5× HD coded, M27. (4x BF/DF, Pol, centerable and 1× BF/DF, Pol, fixed)
	Reflector Turret	4-positon encoded	NA	NA	4-positon encoded
	Stage	mechanical stage 75×30 R	rotary Pol stage d = 180 mm, 360° with 45° click stop	rotary Pol stage d = 180 mm, 360° with 45° click stop	rotary Pol stage d = 180 mm, 360° with 45° click stop
	Z Focus Range	30 mm	30 mm	30 mm	30 mm
	Focus Knob	Fine drive knob left and fine drive disk right	Fine drive knob left and right	Fine drive knob left and right	Fine drive knob left and right
	Pol Equipment		depolarizer, Bertrand system focusable and analyzer rotatable	Slot for Polarizer and Analyzer	Slot for Polarizer and Analyzer
Observation and Documentation	Contrasting Methods	BF,DF, DIC, C-DIC	BF,DF, DIC, C-DIC, Pol	BF,DF, DIC, C-DIC, Pol	BF,DF, DIC, C-DIC, Pol
	Eco Mode	•	•	•	•
	Light Intensity Manager	•	•	•	•
	Snap Button on Stand	•	•	•	•
	Field of View	23 mm	23 mm	23 mm	23 mm
	Optical System	Infitnite, IC²S	Infitnite, IC²S	Infitnite, IC²S	Infitnite, IC²S

Count on Service in the True Sense of the Word

Because the ZEISS microscope system is one of your most important tools, we make sure it is always ready to perform. What's more, we'll see to it that you are employing all the options that get the best from your microscope. You can choose from a range of service products, each delivered by highly qualified ZEISS specialists who will support you long beyond the purchase of your system. Our aim is to enable you to experience those special moments that inspire your work.

Repair. Maintain. Optimize.
Attain maximum uptime with your microscope. A ZEISS Protect Service Agreement lets you budget for operating costs, all the while reducing costly downtime and achieving the best results through the improved performance of your system. Choose from service agreements designed to give you a range of options and control levels. We'll work with you to select the service program that addresses your system needs and usage requirements, in line with your organization's standard practices.

Our service on-demand also brings you distinct advantages. ZEISS service staff will analyze issues at hand and resolve them – whether using remote maintenance software or working on site.

Enhance Your Microscope System.
Your ZEISS microscope system is designed for a variety of updates: open interfaces allow you to maintain a high technological level at all times. As a result you'll work more efficiently now, while extending the productive lifetime of your microscope as new update possibilities come on stream.

Profit from the optimized performance of your microscope system with a Carl Zeiss service contract – now and for years to come.

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Science Services GmbH
Unterhachinger Str. 75 · 81737 Munich, Germany
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